

Docket Number EH-10953

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Appl. No. 10/613,233

Reply to Office action of June 24, 2005

Amendments to the Specification

Please replace paragraphs 18 and 21 with the following amended paragraphs:

[0018] In the event that a malfunction or failure in the main lubricant circuit disrupts the main lubricant stream supplying the bearing, the attendant loss of lubricant pressure causes closure of the check valve 36 to prevent the reserve lubricant from being siphoned out of the reservoir through supply line 34. However, because the engine is still operating, pressurized buffer air continues to flow through the venturi to suction reserve lubricant out of the reservoir and propel a lubricant mist to the bearing. As a result, the operation of the engine is sustained, albeit in an abnormal operating mode. The sustained operation of the engine ensures uninterrupted flow of pressurized air to power the venturi so that the engine can continue to be supplied with a lubricant mist and operate in the abnormal mode. Because the lubricant flow rate of the mist is much smaller than that of the lubricant stream normally provided by the main lubrication circuit, the bearing will likely experience highly accelerated wear and require replacement. Nevertheless, the lubricant mist is adequate to keep the engine operating safely until the lubricant reserve in the reservoir ~~through supply line 34~~ is depleted. In one application for the invention, a reserve of about one-liter of lubricant can support about fifteen minutes of mist lubrication. The aircraft crew can take advantage of these additional minutes of operation to

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systematically follow the procedures necessary to safeguard the aircraft and its occupants and to safely shut the engine down before the rotor seizes or overheats. If the engine powers a military aircraft operating in hostile airspace, the crew can use the interval of extended operation to proceed toward friendly airspace.

[0021] The restrictor ~~36~~ 38 in the supply line ~~34~~ not only meters the lubricant flow into the reservoir, but also introduces a pressure loss. If the restrictor were absent, the high pressure of the main lubricant circuit would urge lubricant through the reservoir ~~32~~, the venturi ~~42~~ and the outlet tube ~~48~~ at a high rate during normal operation, with the result that an adequate reserve of lubricant might not accumulate in the reservoir. By contrast, the lower reservoir pressure resulting from the presence of the restrictor ensures that lubricant outflow from the reservoir is governed by the action of the venturi, which extracts lubricant at a more modest rate, thus promoting the establishment of the reserve and ensuring its continued presence.